

ABSTRACT OF THE DISCLOSURE

The present invention provides a control system for a modular high repetition rate two discharge chamber ultraviolet gas discharge laser. In preferred embodiments, the laser is a production line machine with a master oscillator producing a very narrow band seed beam which is amplified in the second discharge chamber.

Novel control features specially adapted for a two-chamber gas discharge laser system include: (1) pulse energy controls, with nanosecond timing precision (2) precision pulse to pulse wavelength controls with high speed and extreme speed wavelength tuning (3) fast response gas temperature control and (4) F₂ injection controls with novel learning algorithm.